

**PART 70 MINOR SOURCE MODIFICATION
OFFICE OF AIR QUALITY
and
INDIANAPOLIS ENVIRONMENTAL RESOURCES
MANAGEMENT DIVISION**

**International Truck and Engine Corporation
5565 Brookville Road
Indianapolis, Indiana 46219**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

First Minor Source Modification: 097-12752-00039	
Issued by: Daniel B. Dovenbarger, Administrator Environmental Resources Management Division DPW, City of Indianapolis	Issuance Date:

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SECTION A

SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) City of Indianapolis, Environmental Resources Management Division (ERMD). The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary source which includes a gray iron foundry operation and engine testing and assembly operations

Responsible Official: Plant Manager, Engine Plant and
Plant Manager, Foundry Plant
Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
SIC Code: 3714, 3321
County Location: Marion
County Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Major Source, under PSD;
Major Source, Section 112 of the Clean Air Act
1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission unit and pollution control device:

- (a) one (1) Casting Line, identified as emission unit EU-F18, with a maximum operation capacity of 22 ton of iron poured per hour, with pouring and cooling emissions controlled by a 50,000 cfm baghouse, exhausting through one (1) stack, identified as S-F18; and
- (b) one (1) Engine Test Cell, identified as NGDI, with a maximum capacity of 250,000 engines per year, combusting diesel fuel oil.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22); and
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3.

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, on the attached Certification Form, with each submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1), (3), (13)] [326 IAC 2-7-6(1), (6)] [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this approval, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this approval, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

- (c) A copy of the PMPs shall be submitted to IDEM, OAQ, and ERMD upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ, and ERMD. IDEM, OAQ, and ERMD may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or ERMD makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or ERMD within a reasonable time.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission unit vented to the control equipment is in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

- (a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ and ERMD within forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, and ERMD, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.10 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.11 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. The compliance monitoring plan can be either an entirely new document, consist in whole of information contained in other documents, or consist of a combination of new information and information contained in other documents. If the compliance monitoring plan incorporates by reference information contained in other documents, the Permittee shall identify as part of the compliance monitoring plan the documents in which the information is found. The elements of the compliance monitoring plan are:
 - (1) This condition;
 - (2) The Compliance Determination Requirements in Section D of this permit;
 - (3) The Compliance Monitoring Requirements in Section D of this permit;
 - (4) The Record Keeping and Reporting Requirements in Section C (General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and
 - (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ and ERMD upon request

and shall be subject to review and approval by IDEM, OAQ, and ERMD. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:

- (A) Reasonable response steps that may be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and
 - (B) A time schedule for taking reasonable response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to take reasonable response steps may constitute a violation of the permit.
- (c) Upon investigation of a compliance monitoring excursion, the Permittee is excused from taking further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (e) All monitoring required in Section D shall be performed at all times the equipment is operating. If monitoring is required by Section D and the equipment is not operating, then the Permittee may record the fact that the equipment is not operating or perform the required monitoring.
- (f) At its discretion, IDEM may excuse the Permittee's failure to perform the monitoring and record keeping as required by Section D, if the Permittee provides adequate justification and documents that such failures do not exceed five percent (5%) of the operating time in any quarter. Temporary, unscheduled unavailability of qualified staff shall be considered a valid reason for failure to perform the monitoring or record keeping requirements in Section D.

C.12 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-7-16.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and ERMD within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Office of Air Quality
Telephone Number: 1-800-451-6027 (ask for Office of Air Quality,
Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

Environmental Resources Management Division
Telephone Number: 327-2234 (ask for Compliance Section)
Facsimile Number: 327-2274

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

within two (2) working days of the time when emission limitations were

exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) IDEM, OAQ, and ERMD may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ, and ERMD by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
 - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
 - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
 - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value.

Any operation shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

**C.13 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]
[326 IAC 2-7-6]**

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.14 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or ERMD makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or ERMD within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.15 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the

envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and ERMD on or before the date it is due.

- (c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

one (1) Casting Line, identified as EU-F18, with a maximum operation capacity of 22 ton of iron poured per hour, with pouring and cooling emissions controlled by a 50,000 cfm baghouse, exhausting through one (1) stack, identified as S-F18.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6-1-2(a)]

Pursuant to 326 IAC 6-1-2(a)(Area Particulate Limitations), particulate matter (PM) emissions from EU-F18 shall be limited to 0.03 grain per dry standard cubic foot.

D.1.2 PSD Minor PM-10 Limitations [40 CFR 52.21][326 IAC 2-2]

Pursuant to 326 IAC 2-2, particulate matter emissions less than ten microns in aerodynamic diameter (PM-10),

(a) PM-10 shall be limited to 0.1176 pounds per ton of metal poured.

(b) 170,000 tons of metal poured per twelve (12) consecutive month period.

Compliance with D.1.2(a) & (b) and D.2.2(a) & (b) shall limit PM-10 emissions to less than ten (10) tons per twelve (12) consecutive month period. This will make the PSD Regulation 40 CFR 52.21 and 326 IAC 2-2 not applicable.

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility.

Compliance Determination Requirements

D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

During the period within 180 days after startup of EU-F18, a performance test shall be conducted in order to demonstrate compliance with Condition D.1.2, the Permittee shall perform PM-10 testing utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensable PM-10. Testing shall be conducted in accordance with Section C- Performance Testing.

D.1.5 Particulate Matter ten (10) microns in aerodynamic diameter (PM-10)

Compliance with Condition D.1.2 shall be demonstrated within 30 days of the end of each month based on the total ton of PM-10 emitted per twelve (12) consecutive month period.

D.1.6 Particulate Matter ten (10) microns in aerodynamic diameter (PM-10)

In order to comply with D.2.2, the baghouse for PM control shall be in operation and control emissions from the pouring and cooling at all times that the pouring and cooling are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.7 Visible Emissions Notations

- (a) Visible emission notations of EU-F18 stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

D.1.8 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the pouring and cooling process, at least once per shift when the pouring and cooling process is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 2.0 and 10.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and ERMD and shall be calibrated at least once every six (6) months.

D.1.9 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the pouring and cooling operation when venting to the atmosphere. All defective bags shall be replaced.

D.1.10 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be

initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.11 Record Keeping Requirements

- (a) To document compliance with Conditions D 1.2 and D.1.5 the Permittee shall maintain monthly records complete and sufficient to establish compliance with the PM-10 limits established in Condition D.1.2.
- (b) To document compliance with Condition D.1.7, the Permittee shall maintain records of daily visible emission notations of EU-F18 stack exhaust.
- (c) To document compliance with Condition D.1.8, the Permittee shall maintain weekly records of the Inlet and outlet differential static pressure during normal operation.
- (d) To document compliance with Condition D.1.9, the Permittee shall maintain records of the results of the inspections required under Condition D.1.9.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.12 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION D.2

EMISSIONS UNIT OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

One (1) Engine Test Cell, identified as NGDI, with a maximum capacity of 250,000 engines per year, combusting diesel fuel oil.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.2.1 Particulate Matter (PM) [326 IAC 6-1-2(a)]

Pursuant to 326 IAC 6-1-2(a)(Area Particulate Limitations), particulate matter (PM) emissions from NGDI shall be limited to 0.03 grain per dry standard cubic foot.

D.2.2 PSD Minor PM-10 Limitations [40 CFR 52.21][326 IAC 2-2]

Pursuant to 326 IAC 2-2, particulate matter emissions less than ten (10) microns in aerodynamic diameter (PM-10),

(a) PM-10 shall be limited to less than 0.0476 pounds per gallon of diesel fuel used and

(b) 210,000 gallons of diesel fuel input per twelve (12) consecutive month period.

Compliance with D.1.2(a) & (b) and D.2.2(a) & (b) shall limit PM-10 emissions to less than five (5) tons of PM-10 emissions per 12 consecutive month period. This will make the PSD Regulation 40 CFR 52.21 and 326 IAC 2-2 not applicable.

D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this emission unit.

Compliance Determination Requirements

D.2.4 Particulate Matter ten (10) microns in aerodynamic diameter (PM-10)

Compliance with Condition D.2.2 shall be demonstrated within 30 days of the end of each month based on pounds of PM-10 per gallon of diesel fuel used and the total gallons of fuel used per twelve (12) consecutive month period.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.5 Record Keeping Requirements

(a) To document compliance with Conditions D.2.2 and D.2.4 the Permittee shall maintain monthly records complete and sufficient to establish compliance with the PM-10 limits established in Condition D.2.2.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.6 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR COMPLIANCE SECTION**

**PART 70 SOURCE MODIFICATION
CERTIFICATION**

Source Name: International Truck and Engine Corporation
Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Source Modification No.: 097-12752-00039

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

- 9 Test Result (specify) _____
- 9 Report (specify) _____
- 9 Notification (specify) _____
- 9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF Air Quality
COMPLIANCE DATA SECTION
and
ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR COMPLIANCE SECTION**

Part 70 Source Modification Quarterly Report

Source Name: International Truck and Engine Corporation
Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Source Modification No.: 097-12752-00039
Facility: EU-F18
Parameter: Casting line: Pouring and cooling PM-10 emissions
Limit: PM-10 shall be limited to 0.1176 pounds per ton of metal poured and 170,000 tons of metal poured per twelve (12) consecutive month period

YEAR: _____

Month	metal poured (ton)	multiply by 0.1176# / ton	Column 1	Column 2	Column 1 + Column 2
			This Month	Previous 11 Months	12 Month Total

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.

Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF Air Quality
COMPLIANCE DATA SECTION
and
ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR COMPLIANCE SECTION**

Part 70 Source Modification Quarterly Report

Source Name: International Truck and Engine Corporation
Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Source Modification No.: 097-12752-00039
Facility: NGDI
Parameter: PM-10
Limit: PM-10 shall be limited to less than 0.0476 pounds per gallon of diesel fuel used and 210,000 gallons per twelve (12) consecutive month period

YEAR: _____

Month	fuel combusted (gallons)	Column 1	Column 2	Column 1 + Column 2
		This Month	Previous 11 Months	12 Month Total

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.

Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR COMPLIANCE SECTION**

**PART 70 OPERATING PERMIT
SEMI-ANNUAL DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: International Truck and Engine Corporation
Source Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Mailing Address: 5565 Brookville Road, Indianapolis, Indiana 46219
Source Modification No.: 097-12752-00039

Months: _____ to _____ Year: _____ Page 1 of 2

This report is an affirmation that the source has met all the requirements stated in this permit. This report shall be submitted semi-annual based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)

Date of Deviation:

Duration of Deviation:

Number of Deviations:

Probable Cause of Deviation:

Response Steps Taken:

Permit Requirement (specify permit condition #)

Date of Deviation:

Duration of Deviation:

Number of Deviations:

Probable Cause of Deviation:

Response Steps Taken:

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Attachment A

The following state rule have been adopted by reference by the Indianapolis Air Pollutant Control Board and are enforceable by Indianapolis Environmental Resources Management Division (ERMD) using local enforcement procedures.

- (1) 326 IAC 1-1-1 through 1-1-3 and 1-1-5;
- (2) 326 IAC 1-2-1 through 1-2-91 (In addition, the IAPCB has adopted several local definitions);
- (3) 326 IAC 1-3-1 through 1-3-4;
- (4) 326 IAC 1-4-1 (The IAPCB added to the adoption by reference a citation to 61 FR 58482 (November 15, 1996));
- (5) 326 IAC 1-5-1 through 1-5-5;
- (6) 326 IAC 1-6-1 through 1-6-6;
- (7) 326 IAC 1-7-1 through 1-7-5;
- (8) 326 IAC 2-3-1 through 2-3-5;
- (9) 326 IAC 2-4-1 through 2-4-6;
- (10) 326 IAC 2-6-1 through 2-6-4;
- (11) 326 IAC 2-7-1 through 2-7-18, 2-7-20 through 2-7-25;
- (12) 326 IAC 2-8-1 through 2-8-15, 2-8-17 through 2-8-10;
- (13) 326 IAC 2-9-1 through 2-9-14;
- (14) 326 IAC 2-10-1 through 2-10-5 (The IAPCB adoption adds the language "state or local" immediately after the word "federal" in 326 IAC 2-10-1);
- (15) 326 IAC 2-11-1, 2-11-3 and 2-11-4 (The IAPCB adoption adds the language "federal, state or local" immediately after the word "by" in 326 IAC 2-11-1);
- (16) 326 IAC 3-1.1-1 through 3-1.1-5;
- (17) 326 IAC 3-2.1-1 through 3-2.1-5;
- (18) 326 IAC 3-3-1 through 3-3-5;
- (19) 326 IAC 4-2-1 through 4-2-2;
- (20) 326 IAC 5-1-1 (a), (b) and c) (5), 5-1-2 (1), (2)(A), (2)c) (4), 5-1-3 through 5-1-5, 5-1-7;
- (21) 326 IAC 7-1.1-1 and 7-1.1-2;
- (22) 326 IAC 7-2-1;
- (23) 326 IAC 7-3-1 and 7-3-2;
- (24) 326 IAC 7-4-2(28) through (31) (Instead of adopting by reference 7-4-2(1) through (27), the IAPCB regulation substitutes the same requirements listed in a format in which the companies are alphabetized and emission points known to no longer exist have been deleted);
- (25) 326 IAC 8-1-0.5 except (b), 8-1-1 through 8-1-2, 8-1-3 except c), (g) and (i), 8-1-5 through 8-1-12;
- (26) 326 IAC 8-2-1 through 8-2-12 (The IAPCB adoption by reference of 8-2- 5 adds additional language specific to Zimmer Paper Products, Incorporated as subpart c);
- (27) 326 IAC 8-3-1 through 8-3-7;
- (28) 326 IAC 8-4-1 through 8-4-5, 8-4-6 (a)(6), (a)(8) and (a)(14) and 8-4-6(b)(1), (b)(3) and 8-4-6c) (In place of 8-4-6(b)(2), which was not adopted, the IAPCB adopted language requiring a pressure relief valve set to release at no less than four and eight-tenths (4.8) Kilo Pascals (seven-tenths (0.7) pounds per square inch)), 8-4-7 except (e), 8-4-8 and 8-4-9;
- (29) 326 IAC 8-5-1 through 8-5-4, 8-5-5 except (a)(3) and (d)(3);
- (30) 326 IAC 8-6-1 and 8-6-2;
- (31) 326 IAC 9-1-1 and 9-1-2;
- (32) 326 IAC 11-1-1 through 11-1-2;

Attachment A continued

- (33) 326 IAC 11-2-1 through 11-2-3;
- (34) 326 IAC 11-3-1 through 11-3-6;
- (35) 326 IAC 14-1-1 through 14-1-4;
- (36) 326 IAC 14-2-1 except 40 CFR 61.145;
- (37) 326 IAC 14-3-1;
- (38) 326 IAC 14-4-1;
- (39) 326 IAC 14-5-1;
- (40) 326 IAC 14-6-1;
- (41) 326 IAC 14-7-1;
- (42) 326 IAC 14-8-1 through 14-8-5;
- (43) 326 IAC 15-1-1, 15-1-2(a)(1), (a)(2) and (a)(8), 15-1-3 and 15-1-4;
- (44) 326 IAC 20-1-1 through 20-1-4 (In 20-1-3(b)(2) the adoption states that "permitting authority" means the commissioner of IDEM or the administrator of ERMD, whichever is applicable);
- (45) 326 IAC 20-2-1;
- (46) 326 IAC 20-3-1;
- (47) 326 IAC 20-4-1;
- (48) 326 IAC 20-5-1;
- (49) 326 IAC 20-6-1;
- (50) 326 IAC 20-7-1;
- (51) 326 IAC 20-8-1;
- (52) 326 IAC 20-9-1;
- (53) 326 IAC 20-14-1;
- (54) 326 IAC 20-15-1;
- (55) 326 IAC 20-16-1;
- (56) 326 IAC 20-17-1;
- (57) 326 IAC 20-18-1;
- (58) 326 IAC 20-19-1;
- (59) 326 IAC 20-20-1;
- (60) 326 IAC 20-21-1;
- (61) 326 IAC 21-1-1 (The adoption states that "or the administrator of ERMD" is added in (b));
- (62) 326 IAC 22-1-1 (The adoption states that "or the administrator of ERMD" is added in (b)).

**Indiana Department of Environmental Management
Office of Air Quality
and
Indianapolis Environmental Resources Management Division**

**Technical Support Document (TSD) for a Minor Modification to a
Part 70 Operating Permit**

Source Background and Description

Source Name:	International Truck and Engine Corporation
Source Location:	5565 Brookville Road, Indianapolis, Indiana 46219
County:	Marion
SIC Code:	3714, 3321
Operation Permit No.:	T097-6993-00039
Operation Permit Issuance Date:	Part 70 permit issuance pending
Minor Source Modification No.:	097-12752-00039
Permit Reviewer:	Monica Dick

The Office of Air Quality (OAQ) and Indianapolis Environmental Resources Management Division (ERMD) has reviewed a modification application from International Truck and Engine Corporation relating to the operation of a gray iron foundry operation and engine testing and assembly operations. The modification consists of the following emission units:

- (a) one (1) Casting Line, identified as emission unit EU-F18, with a maximum operation capacity of 22 ton of iron poured per hour, with pouring and cooling emissions controlled by a 50,000 cfm baghouse, exhausting through one (1) stack, identified as S-F18; and
- (b) one (1) Engine Test Cell, identified as NGDI, with a maximum capacity of 250,000 engines per year, combusting diesel fuel oil.

History

International Truck and Engine Corporation submitted two applications to ERMD. The first, was received on September 13, 2000 requesting to add a new casting line. The second, was received on September 25, 2000 for a new engine test cell. This review covers both of these applications. International Truck and Engine Corporation submitted a Part 70 permit application on October 24, 1996. The Part 70 Operating Permit has not been issued yet.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S-F18	Pouring and Cooling	(1)	(1)	(1)	(1)

(1) Not available at this time

Recommendation

The staff recommends to the Commissioner that the Minor Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 23, 2000. Additional information was received on September 13, 2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 8).

Potential To Emit - EU-F18 & NGDI

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls at maximum capacity (192,720 tons per year). Control equipment and usage limits are not considered federally enforceable until it has been required in a federally enforceable permit. PTE calculations and emission factors are identified on pages 4 and 7 of appendix A.

Pollutant	Potential To Emit (tons/year)
PM	18.99
PM-10	18.99
SO ₂	8.06
VOC	21.1
CO	1.69
NO _x	4.77

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

HAP's	Potential To Emit (tons/year)
Acetaldehyde	0.36
Benzene	3.59
o-Creosol	0.09
Formaldehyde	0.20
napthalene	0.25
Phenol	0.59
Toluene	1.93
Xylene	1.17
Propylene	0.05
TOTAL	8.23

Increased Utilization

No associated emissions will occur as a result of the new casting line, since the maximum amount of engines produces at this source will not increase as a result of the proposed modification. Associated emission units are those that are not physically modified but will experience an emission increase as a result of a particular project. These types of units are often termed debottlenecked units because their ability for greater capacity utilization results when the bottleneck in a production process is eliminated as part of a project. Per EPA netting guidance, debottlenecked emissions are calculated as part of a project's emissions increase.

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Minor Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(d)(4), (5)(C) (5)(D), & (5)(E). The modification has a potential to emit less than twenty-five(25) tons per year and equal to or greater than five (5) tons per year of either particulate matter (PM), particulate matter less than ten(10) microns (PM-10), sulfur dioxide (SO₂), and volatile organic compounds (VOC)

Limited Potential to Emit - EU-F18

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Limited Potential to Emit (tons/year)					
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x
Casting Line	NA	10	NA	NA	NA	NA
Test Cell	NA	less than 5	NA	NA	NA	NA
Total Emissions	NA	less than 15	NA	NA	NA	NA
significant PSD threshold	25	15	40	40	100	40
PSD Applies (yes or No)	No	No	No	No	No	No

NA = no limits. no thresholds triggered

County Attainment Status

The source is located in Marion County.

Pollutant	Status
PM-10	attainment
SO ₂	maintenance
NO _x	attainment
Ozone	maintenance
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as attainment or unclassifiable for ozone.
- (b) Marion County has been classified as attainment, maintenance, or unclassifiable for PM-10, SO₂, NO_x, CO, and Pb. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Federal Rule Applicability - EU-F18 & NGDI

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) applicable to this source.

40 CFR Part 63.43 and 326 IAC 2-4.1-1 applies to any owner or operator who constructs a major source of hazardous air pollutants (HAPs), as defined in 40 CFR 63.41, after July 27, 1997. The HAPs from the new casting line is less than the major source thresholds for HAPs. Therefore the requirements of 40 CFR Part 63.43 and 326 IAC 2-4.1-1 do not apply.

- (c) 40 CFR Part 64 Compliance Assurance Monitoring does not apply, since this source has submitted a complete Part 70 application prior to April 20, 1998 and this unit is not a large Pollutant Specific Emission Unit (PSEU).

State Rule Applicability - EU-F18 & NGDI

Prevention of Significant Deterioration (PSD) 326 IAC 2-2

International Truck and Engine Corporation has the potential to emit 100 ton of a criteria pollutant per year and is a Gray iron foundry and engine plant, which is classified as an Iron mill plant or secondary metal production plant. Therefore, this source meets the definition of Major PSD source under 326 IAC 2-2-1(p)(1)(F).

PSD applies when a significant net emissions increase occurs. A significant net emission increase of PM-10 is 15 tons per year. The limits under conditions D.1.2 and D.2.2 limits the emission units identified so that PSD does not apply. The limit was based on the sources request for a 170,000 ton metal poured per year limit and a fuel usage limit of 210,000 gallons per year. The short term limit was established, using the 10 ton PM-10 emission per year limit, to stay below the significant modification threshold of 15 ton PM-10 emission per year. The short term emission calculation is as follows:

EU-F-18:

Potential PM-10 emissions (TSD App A, page 4 of 8) = 12.43 ton/year

PM-10 limit

limit 10 ton or 20,000lb PM-10 emissions per year = 170,000t metal poured/yr X ?lb/ton

20,000lb/yr X yr/170,000t metal poured = short term limit

0.1176 lb/ton = short term limit

NGDI: PM-10 limit

Potential PM-10 emissions (TSD App A, page 7 of 8) = 6.56 ton/year

limit 5 ton or 10,000 lb PM-10 emissions per year = 210,000 gal diesel used/yr X ? #/gal

10,000#/yr X yr/210,000gal = short term limit

0.0476# / gal + short term limit

NGDI: NOx alternate emission factor

Based on a January 10, 1995 engine test cell stack test at Navistar International Transportation Corporation the maximum fuel consumption, during a three run test, of 35 engines was 20.77 gallons per hour and a NOx emission of 3.72 lbs per hour which equates to a 0.18 emission factor used to calculate potential emissions for NGDI. Therefore, the potential emissions are calculated to be 18.9 tons per year which is less than the 40 ton per year threshold of a major PSD modification.

Preventative Maintenance Plan 326 IAC 1-6-3

A Preventative Maintenance Plan (PMP) is required for EU-F18 and NGDI because PM, SO₂, and VOC are emitted, there are existing applicable requirements, and the PTE is limited.

Stack Height Provisions 326 IAC 1-7

This regulation applies to all emitting units with exhaust stacks through which a potential of 25 tons per year or more of particulate matter or sulfur dioxide are emitted. However, emitting units with exhaust stacks which meet the aforementioned criteria and have actual emissions less than 25 tons of particulate matter or sulfur dioxide are exempt under 326 IAC 1-7-5. Since EU-F18 & NGDI will not have actual emissions greater than 25 tons per year of particulate matter or sulfur dioxide, this unit is exempt from the requirements of this regulation.

Particulate Matter Limitations 326 IAC 6-1

Since the source is located in Marion County and has potential PM emissions greater than 100 tons per year the requirements of 326 IAC 6-1 apply. Since this emissions unit is not specifically regulated under subsections (b) through (g) of 326 IAC 6-1 the general emissions limitation under subsection (a) applies. Pursuant to 326 IAC 6-1-2(a) the PM emissions from EU-F18 and NGDI are limited to 0.03 grains per dry standard cubic foot of exhaust gas. Since the stack flow rates are not available at this time it is not possible to determine the equivalency in tons per year associated with this limit.

Testing Requirements 326 IAC 3.2-1

Based on ERMD and OAQ review of the PSD limit, set for PM-10, it is determined that there is insufficient data to demonstrate that the usage limit for EU-F18 was developed from high quality emission estimates. Both AP-42 and FIRE gave a "D" rating for the listed emission factors. Emission Factor Quality Rating System: "D" (below Average)

The emission factor was developed only from A- and B- rated test data from a small number of facilities, and there is reason to suspect that these facilities do not represent a random sample of the industry. There also may be evidence of variability within the source category population. Limitations on the use of the emission factor are noted in the emission factor table. -Background Report AP-42 Section 12.10

Therefore, the usage limit based on the emission factors included in the calculations listed in Attachment A of this TSD shall be verified with a stack test.

Opacity Limitations 326 IAC 5-1

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) opacity in twenty-four hours (24) consecutive readings as determined by 326 IAC 5-1-4,
- (b) Opacity shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.

New Source General Emission Reduction Requirements (326 IAC 8-1-6)

Since the emission unit has a potential VOC emission before control less than 25 tons per year the requirements of 326 IAC 8-1-6 do not apply.

Compliance Requirements - EU-F18 & NGDI

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs, IDEM, OAQ, in

conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

Based on ERMD and OAQ review Compliance Monitoring is required for EU-F18. The unit is not subject to a NSPS or NESHAP. However, the unit has a device to control emissions; and the "allowable emissions" (defined under 326 IAC 1-2-2) exceed 10 pounds per hour.

$$(0.03\text{gr/dscf})(50,000\text{cf/min})(60\text{min/hr})(1\text{ lb}/7000\text{gr}) = 12.9\text{ lb/hr}$$

Compliance Monitoring is not required for NGDI. The unit is subject to a NSPS or NESHAP and the units does not have a control device, and has actual emissions do not exceeding 25 tons per year.

Air Toxic Emissions - EU-F18 & NGDI

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Quality (OAQ) Part 70 Application Form GSD-08.

- (a) EU-F18 will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations for detailed air toxic calculations. (Appendix A, ie. pages 1 through 8)

Conclusion

The operation of this shall be subject to the conditions of the attached Minor Source Modification Permit No. 097-12752-00039.

Appendix A: Emission Calculations

Page 1 of 8 TSD App A

AP-42 Potentials

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 97-12752-39
Reviewer: Monica Dick
Date: 1-30-1

Maximum Capacity of iron poured
ton per hour

22.0

	pouring, cooling		pouring	castings cooling	Pollutant		
Emission Factor lb/ton of metal charged	PM 4.20	PM10 2.06	PM-10 0.66	PM10 1.40	SO2 0.02	NOx 0.01	VOC 0.14
Potential Emission in tons/yr	404.71	198.50	63.60	134.90	1.93	0.96	13.49

Methodology

FIRE

Emission Factors from US EPA - FIRE 6.22, pouring/casting SCC #3-04-003-20 & casting cooling #3-04-003-25, PM, PM-10, & CO = rating D, SOx, NOx, & VOC = rating of U

Emission (tons/yr) = Throughput (ton/yr) x Emission Factor (lb/ton) X 8760hr/yr X ton/2,000 lb

AP-42

page 12.10-3, Figure 12.10-1 shows pouring SCC of 3-04-003-20 and cooling SCC 3-04-003-25. However, no emission factor is given for, SCC 3-04-003-20 or 25, in chapter 12.

page 12.10-11, Table 12.10-7 Particulate emission factor for ancillary operations and fugitive sources at gray iron foundries are listed under SCC 3-04-0003-18.

The emission factor is 4.2 lb total PM emissions /ton gray iron produced with a rating of E

Page 12.10-15, Table 12.10-9 (cont) pouring, cooling SCC 3-04-003-18. The emission factor for particle size 10.0um cumulative mass is 2.06 lb PM-10 emissions / ton metal produced.

Therefore:

pouring, cooling PM AP-42 SCC 03-04-003-18 emission factor of 4.2 is equal to, FIRE pouring/casting PM SCC 3-04-003-20 and
pouring, cooling PM-10 AP-42 SCC 03-04-003-18 emission factor of 2.06 is equal to, FIRE pouring/casting SCC 3-04-003-20 and
the additional FIRE castings cooling emission factor of 1.4 draws question to the applicability of both AP-42 and FIRE 6.22 emission factors.

Definition of casting:

One of the oldest and most common methods of forming. It requires the melting of a solid, heating it to the proper temperature, treating it to produce a desired chemical composition, and then pouring it into a cavity or mold for solidification.

Assumption

By definition casting includes melting, treating, and pouring/cooling. International truck and engine is not modifying the plant to include a new heating unit. They are only modifying the source to include a metal forming and finishing line consisting of pouring and cooling. It seems that both FIRE 6.22 and AP-42 emission factors include emissions from melting, treating, and pouring/cooling. Melting and refining contribute significantly to the emissions from the casting process. Therefore we might consider the sources provided emission factors or mass balancing. Further information is provided on the following page.

E rated = poor. Factor is developed from C- rated and D-rated test data from a very few number of facilities tested do not represent a random sample of the industry. There also may be evidence of variability within the source category population.

U rated = Unrated (only used in the L&E documents). Emission factor is developed from source tests which have not been thoroughly evaluated, research papers, modeling data, or other sources that may lack supporting documentation. The data are not necessarily "poor", but there is not enough information to rate the factors according to the rating protocol.

Volume II:Chapter 9 Preferred and Alternative Methods For Estimating Air Emissions From Secondary Metal Processing, June 1998**Page 9.2-2 Figure 2.1-1 Flow Diagram of Secondary Metal Processing Operations**

Pouring and Cooling fall under Metal Forming and Finishing

Page 9.2-6 2.2 Emission Sources

Although the operations used in metal processing can be similar and have some pollutant emissions in common (for example, NO_x, CO, and PM), there are no data available to indicate that qualitative and quantitative emissions information developed for one type of metal processing can be used to estimate emissions from another type of metal processing. Emission factors, for example, are specific to the industry for which they were developed. There may be occasions, however, where process and materials are similar enough that it may be reasonable to use emissions information or estimation methods for one to apply to the second.

Page 9.2-13, 2.2.5 Metal Forming and Finishing Emissions

As the molten is poured into molds, PM, CO, and organic compound emissions are generated, with the emissions continuing as the mold, especially when a shaking or vibration operation is used. If the form requires finishing, such as grinding or milling, more PM emissions result. Data are available only for iron and steel foundries and secondary lead processing and are shown in

Table 9.2-4. Particulate matter, CO, and organic compounds are expected from core baking and organic compounds evaporate during mold drying. Emissions types from mold and core production at iron and steel foundries are shown in Table 9.2-5. Emissions from mold and core production at other metal processing facilities are expected to be similar.

page 9.2-15, Table 9.2-4 Metal Forming Emissions and Control Techniques, Iron Foundries, Pollutant PM(metal oxides)

Page 9.2-16, Table 9.2-5 Mold and Core Production Emissions and Control Techniques, Iron Foundries, Pollutant, PM(metal oxides), Organic compounds, and CO

Available Methods of Emissions Estimation Methodologies: Page 9.3-4, Table 9.3-1 Summary of Preferred and Alternative Emission Estimations

Methods for Secondary Metal Processing - Preferred: PM processing, PM-10 process, VOC, Speciated organics, and metals = stack sampling data

Preferred: SO₂ process, NO_x, and CO = CEMs

Alternative: SO₂ process, NO_x, and CO = stack sampling data

Alternative: PM processing, PM-10 process, SO₂ process, NO_x, CO, VOC, Speciated organics, and metals = EPA/ State Emission Factors

Alternative: SO₂ process and VOC = Material Balance

Page 9.3-5, 3.2.2 Emission Factors - Due to their availability, ease of use, and low cost, emission factors have gained wide acceptance in the industry and are commonly used to prepare emission inventories. However, emission factors are often averages of limited industry-wide emissions data and so vary in their degree of quality. The underlying data and the resulting average may also inadequately represent emissions for an individual facility within that industry, introducing further error.

Page 9.3-5, 3.2.4 - Mass Balance - An emission estimate based on a material balance approach is the result of calculations with several inputs. Consequently, the accuracy of the emissions estimate is directly related to the accuracy of the values for the inputs. Where inputs to the calculations can not be measured directly (e.g., the amount of material leaving a process in the wastewater), the accuracy of the resulting emissions estimate may vary greatly.

Appendix A: Emission Calculations

Page 3 of 8, TSD App A

Sources Calculated potentials

Company Name: International Truck and Engine Corporation
 Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
 Part 70: 097-6993-00039
 Source Mod.: 97-12752-39
 Reviewer: Monica Dick
 Date: 1-30-1

Maximum Capacity of iron poured
 ton per year

192720.0								
	Pouring 1-2	Cooling 3	Pouring 1-2	Cooling 3	pouring & cooling 4	pouring & cooling 4	pouring & cooling 4	pouring & cooling 4
Emission Factor lb/ton of metal charged	PM 2.80	PM 0.69	PM10 2.80	PM10 0.69	Benzene 0.0371	Toluene 0.0200	Acetaldehyde 0.0035	o-cresol 0.0009
Potential Emission in tons/yr	269.81	66.49	269.81	66.49	3.57	1.93	0.34	0.09

Total PM = 336.30 Total PM-10 = 336.30

	pouring & cooling 4	pouring & cooling 4	pouring & cooling 4	pouring & cooling 4	pouring & cooling 4			
Emission Factor lb/ton of metal charged	Formaldehyde 0.0019	Naphthalene 0.0026	Phenol 0.0058	Xylene 0.0120	Total HAP	SO2 0.02	NOx 0.01	VOC 0.14
Potential Emission in tons/yr	0.18	0.25	0.56	1.16	8.07	1.93	0.96	13.49

Methodology

Emission (tons/yr) = Throughput (ton/yr) x Emission Factor (lb/ton) X 8760hr/yr X ton/2,000 lb

Cooling emission factors

1 Compilation of Air Pollutant Emission Factors, AP-42, Fifth edition, USEPA, Office of Air Quality Planning & Standards, January 1995. The emission factor indicated here is the sum of the emission factors from pouring and cooling (SCC 3-04-003-18) 4.20E=00 lbs/ton Gray Iron produced. This emission factor was taken from Table 12.10-7 particulate Emission Factor for Ancillary operations and Fugitive Sources at Gray Iron Foundries.

2 Gray Iron Foundries - 3321, FIRE Version 5.0, EPA-454/R-95-012, USEPA, August 1995

3 Stack test - 0.7954 was obtained from a stack testing of the pouring and cooling operations conducted in an Indiana foundry on November, 1999.

This value is the average of three runs. The emission factor used herein is an estimation of the emission factor for cooling operations.

4 Casting Emission Reduction Program (CERP) - American Foundryman's society, Inc., US EPA, California EPA Air Resources Board, and McClellan Air Force Base "Foundry Process Emission Factors: Baseline Emissions from Automotive Foundries in Mexico." (November 24, 1998). Values are the sum of the averages of pouring and cooling found in Table 5.6 "Best Estimates of Nonzero HAP Emissions from Pouring, Cooling and Shakeout" (Page 53)

Appendix A: Emission Calculations
Potentials Calculated with Background AP-42

Page 4 of 8, TSD App A

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 97-12752-39
Reviewer: Monica Dick
Date: 1-30-1

Maximum Capacity of iron poured

ton per year								
192720.0								
	Pouring1	Cooling 1	Pouring 1	Cooling 1	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2
Emission Factor lb/ton of metal charged	PM 0.0430	PM 0.0860	PM10 0.0430	PM10 0.0860	Benzene 0.0371	Toluene 0.0200	Acetaldehyde 0.0035	o-cresol 0.0009
Potential Emission in tons/yr	4.14	8.29	4.14	8.29	3.5750	1.9272	0.3373	0.0867
Total PM = 12.43 Total PM-10 = 12.43								
	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2			
Emission Factor lb/ton of metal charged	Formaldehyde 0.0019	Naphthalene 0.0026	Phenol 0.0058	Xylene 0.0120	Total HAP	SO2 0.02	NOx 0.01	VOC 0.14
Potential Emission in tons/yr	0.1831	0.2505	0.5589	1.1563	8.0750	1.93	0.96	13.49

Methodology

Emission (tons/yr) = Throughput (ton/yr) x Emission Factor (lb/ton) X 8760hr/yr X ton/2,000 lb

1 Background Report AP-42 Section 12.10 Iron Foundries 1-103, page 33

Reference 11: S. Gronberg, Characterization Of Inhalable Particulate Matter Emissions From An Iron Foundry, Lynchburg Foundry, Archer Creek Plant, EPA-600/X-85-328, U.S. Environmental Protection Agency, Cincinnati, OH, August 1984

Stack test Rated "A" Method 5 = cooling 0.086 lb/ton, pouring 0.043 lb/ton = 0.111 lb/ton combined

References on other AP-42 PM & PM-10 pouring and cooling Page 47 and 45 it is unclear what emissions were included Ref. 1,3, 25, PM and 13, 21, 22, 25, & 26 PM-10 E & D ratings respectively

2 Casting Emission Reuction Program (CERP) - American Foundryman's society, Inc., US EPA, California EPA Air Resources Board, and McClellan Air Force Base "Foundry Process Emission Factors: Baseline Emissions from Automotive Foundries in Mexico." (November 24, 1998). Values are the sum of the averages of pouring and cooling found in Table 5.6 "Best Estimates of Nonzero HAP Emissions from Pouring, Cooling and Shakeout" (Page 53)

Appendix A: Emission Calculations
Emission limit calculated with Background AP-42

Page 5 of 8, TSD App A

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 97-12752-39
Reviewer: Monica Dick
Date: 1-30-1

Maximum Capacity of iron poured

ton per year								
170000.0								
	Pouring1	Cooling 1	Pouring 1	Cooling 1	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2
Emission Factor lb/ton of metal charged	PM 0.0430	PM 0.0860	PM10 0.0430	PM10 0.0860	Benzene 0.0371	Toluene 0.0200	Acetaldehyde 0.0035	o-cresol 0.0009
Potential Emission in tons/yr	3.66	7.31	3.66	7.31	3.1535	1.7000	0.2975	0.0765
Total PM = 10.97 Total PM-10 = 10.97								

	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2	pouring & cooling 2			
Emission Factor lb/ton of metal charged	Formaldehyde 0.0019	Naphthalene 0.0026	Phenol 0.0058	Xylene 0.0120	Total HAP	SO2 0.02	NOx 0.01	VOC 0.14
Potential Emission in tons/yr	0.1615	0.2210	0.4930	1.0200	7.1230	1.70	0.85	11.90

Methodology

Emission (tons/yr) = Throughput (ton/yr) x Emission Factor (lb/ton) X 8760hr/yr X ton/2,000 lb

1 Background Report AP-42 Section 12.10 Iron Foundries 1-103, page 33

Reference 11: S. Gronberg, Characterization Of Inhalable Particulate Matter Emissions From An Iron Foundry, Lynchburg Foundry, Archer Creek Plant, EPA-600/X-85-328, U.S. Environmental Protection Agency, Cincinnati, OH, August 1984

Stack test Rated "A" Method 5 = cooling 0.086 lb/ton, pouring 0.043 lb/ton = 0.111 lb/ton combined

References on other AP-42 PM & PM-10 pouring and cooling Page 47 and 45 it is unclear what emissions were included Ref. 1,3, 25, PM and 13, 21, 22, 25, & 26 PM-10 E & D ratings respectively

2 Casting Emission Reuction Program (CERP) - American Foundryman's society, Inc., US EPA, California EPA Air Resources Board, and McClellan Air Force Base "Foundry Process Emission Factors: Baseline Emissions from Automotive Foundries in Mexico." (November 24, 1998). Values are the sum of the averages of pouring and cooling found in Table 5.6 "Best Estimates of Nonzero HAP Emissions from Pouring, Cooling and Shakeout" (Page 53)

**Appendix A: Emission Calculations
Engine Test Cell
AP-42 Potentials**

Page 6 of 8, TSD App A

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 97-12752-39
Reviewer: Monica Dick
Date: 1-30-1

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity
MM Btu/yr

42300.0

Emission Factor in lb/MMBtu	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	0.31	0.31	0.29	4.41	0.36	0.95
Potential Emission in tons/yr	6.56	6.56	6.13	93.27	7.61	20.09

Emission Factor in lb/hp-hr	Pollutant						
	Acetaldehyde	Benzene	Formaldehyde	Napthalene	Toluene	Xylene	Propylene
	7.67E-04	9.33E-04	1.18E-03	8.48E-05	4.09E-04	2.85E-04	2.58E-03
Potential Emission in tons/yr	0.02	0.02	0.02	0.00	0.01	0.01	0.05

Methodology

Maximum capacity = 42322.6 MMBtu per year = 300,000 gallons of diesel fuel at 141,000 BTU/gal heat content = 250,000 engines tested per year

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2

Emission (tons/yr) = [Heat input rate (MMBtu/yr) x Emission Factor (lb/MMBtu)] / (2,000 lb/ton)

*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

updated 4/99

Appendix A: Emission Calculations
Engine Test Cell
NOx and CO Emissions based on past stack test

Page 7 of 8, TSD App A

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 97-12752-39
Reviewer: Monica Dick
Date: 1-30-1

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity
MM Btu/yr

42300.0

Emission Factor in lb/MMBtu	Pollutant					
	PM*	PM10*	SO2	NOx 1	VOC	CO 1
	0.31	0.31	0.29	0.18	0.36	0.08
Potential Emission in tons/yr	6.56	6.56	6.13	3.81	7.61	1.69

Emission Factor in lb/hp-hr	Pollutant						
	Acetaldehyde	Benzene	Formaldehyde	Napthalene	Toluene	Xylene	Propylene
	7.67E-04	9.33E-04	1.18E-03	8.48E-05	4.09E-04	2.85E-04	2.58E-03
Potential Emission in tons/yr	0.02	0.02	0.02	0.00	0.01	0.01	0.05

Methodology

Maximum capacity = 42322.6 MMBtu per year = 300,000 gallons of diesel fuel at 141,000 BTU/gal heat content = 250,000 engines tested per year
Emission (tons/yr) = [Heat input rate (MMBtu/yr) x Emission Factor (lb/MMBtu)] / (2,000 lb/ton)

1 Navistar 1995 Engine Test Cells Emission Factor (lbs/gal Diesel fuel). 1995 Emission Testing on Exhaust Stack from six (6) Engine Test Cells.

Average gal per hour four three runs = 18.94, average lb NOx /hr emissions = 3.47

Average gal per hour four three runs = 18.94, average lb NOx /hr emissions = 1.47

2 All other emission factors not otherwise indicated are from: AP42 (Supplement B 10/96), Table 3.3-1 and 3.3-2

*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

updated 4/99

Appendix A: Emission Calculations
Limit on PM and PM-10 source potential calculations are used

Page 8 of 8, TSD App A

Company Name: International Truck and Engine Corporation
Address City IN Zip: 5565 Brookville Road, Indianapolis, Indiana 46219
Part 70: 097-6993-00039
Source Mod.: 97-12752-39
Reviewer: Monica Dick
Date: 1-30-1

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity Gallon equivalent
MM Btu/yr Gallon/yr

29610.0	210000.0
---------	----------

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMBtu * lb/gallon	0.31	0.31	0.29	0.18	0.36	0.08
Potential Emission in tons/yr	4.59	4.59	4.29	18.90	5.33	8.40

	Pollutant						
	Acetaldehyde	Benzene	Formaldehyde	Napthalene	Toluene	Xylene	Propylene
Emission Factor in lb/hp-hr	7.67E-04	9.33E-04	1.18E-03	8.48E-05	4.09E-04	2.85E-04	2.58E-03
Potential Emission in tons/yr	0.01	0.01	0.02	0.00	0.01	0.00	0.04

Methodology

limited potential to emit is based on a limit of 210,000 gallons per year of diesel input at 141,000 fuel content = 29610 MMBtu per year

Maximum capacity = 42322.6 MMBtu per year = 300,000 gallons of diesel fuel at 141,000 BTU/gal heat content = 250,000 engines tested per year

Emission (tons/yr) = [Heat input rate (MMBtu/yr) x Emission Factor (lb/MMBtu)] / (2,000 lb/ton)

1 Navistar 1995 Engine Test Cells Emission Factor (lbs/gal Diesel fuel). 1995 Emission Testing on Exhaust Stack from six (6) Engine Test Cells.

2 All other emission factors not otherwise indicated are from: AP42 (Supplement B 10/96), Table 3.3-1 and 3.3-2

*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

updated 4/99